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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,558	04/23/2001	Robert L. Gerlach	F070	4812

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MICHAEL O. SCHEINBERG  
P.O. BOX 164140  
AUSTIN, TX 78716-4140

EXAMINER

GURZO, PAUL M

ART UNIT PAPER NUMBER

2881

DATE MAILED: 12/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/840,558

Applicant(s)

GERLACH ET AL.

Examiner

Paul Gurzo

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,8,9,11,12,14-19,23,24,26 and 28 is/are rejected.
- 7) ☒ Claim(s) 2-7,10,13,20-22,24,25, and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

Claims 24 and 25 are objected to because of the following informalities: they are both dependent on claim 22, but it appears that they should be dependent on 23 instead. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 recites the use of a "spherical capacitor". There is insufficient antecedent basis for this limitation in the claim.

Claims 16,17,18,19, and 22 recite the use of "Auger electrons". There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Art Unit: 2881

Claims 8, 9, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Ose et al. (6,043,491). Ose et al. teach a scanning electron microscope system including a primary electron beam column (104) for forming a primary electron beam including a high resolution objective lens (106), scanning this beam across a surface, collecting secondary electrons (109) through the objective lens (106), and deflecting them by means of a deflector (122) without significantly degrading the resolution of the primary beam (col. 2, line 63 - col. 3, line 11, col. 4, lines 15-41, and Fig. 1). They also teach the use of a shield electrode (117) to shield the primary beam from the field (col. 3, lines 1-11) and it is inherent that a field is produced through the above-mentioned process. In addition, Ose et al. inherently teach the use of a snorkel lens because it achieves the same results as the prior art.

Claims 23, 24, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Krijn et al. (6,455,848). Krijn et al. teach a method of determining composition comprising creating a primary beam of electrons (4), directing the beam toward the specimen surface (14) through an objective lens (8), directing through the objective lens (8) secondary (Auger) electrons towards a secondary electron energy analyzer (24) for analyzing the energy of the secondary electrons (col. 1, line 9 - col. 2, line 25, col. 5, line 43 - col. 6, line 16, and Fig. 1). They also teach the claimed voltage adjustment (col. 8, lines 38-43).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ose et al. (6,043,491), and further in view of Nakasuji (5,770,863). The above-applied prior art does not teach the use of an electrostatic detector, but Nakasuji demonstrates the use of one in a charged particle beam projection apparatus (col. 7, lines 28-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use this detector because it is known in the art and achieves the claimed results.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ose et al. (6,043,491), and further in view of Gerlach (4,806,754). The above-applied prior art does not teach the use of a spherical capacitor, but Gerlach demonstrates the use of one as an energy analyzer for charged particles (col. 2, lines 41-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use this capacitor because it is known in the art and achieves the claimed results.

Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ose et al. (6,043,491), and further in view of Todokoro et al. (6,310,341).

Regarding claims 15-18, the above-applied prior art does not teach the use of dual pole magnetic lens. However, Todokoro et al. teach the use of a first and second magnetic pole lens (401 and 402) that is disposed within the lens assembly (col. 7, lines 14-61 and Fig. 4). These poles have an aperture for passing the primary electron beam and they make use of a deflection plate to selectively apply potential. Any modification, such as the addition of coils and movable attachments, is considered obvious to the above teachings and is not given patentable weight. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

Art Unit: 2881

was made to use these magnetic poles so that the electron beam path can be adjusted for higher electron transmission.

Regarding claim 19, Todokoro et al. teach movement of the sample in the x- and y- directions (col. 1, lines 63-64).

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krijn et al. (6,455,848), and further in view of Ose et al. (6,043,491). The above-applied prior art teaches the directing of beams through the objective lens but not through a shield. However, Ose et al. teach the use of a shield electrode as applied above. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system taught by Krijn et al. to include a shield so that the electron beam is not affected by electric fields by the analyzer and detector.

*Allowable Subject Matter*

Claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. None of the prior art taken alone or in combination teaches the claimed use of an electrostatic capacitor as well as a shield that is conductive on the inside to shield the primary beam and having a potential gradient on the outside to create an external field related to the electric field of the electrostatic capacitor to reduce distortion of the field of the capacitor caused by the shield.

Claims 2-7, 10, 13, 20-22, 25, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2881

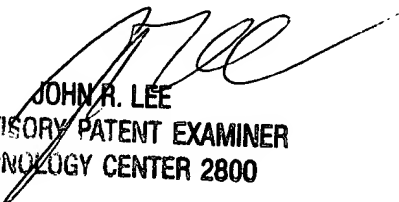
*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG  
December 13, 2002

  
JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800